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THE PROGRAM

OF THE

Practical Pharmacy and Dispensing Section,

American Pharmaceutical Association.
1901 Meeting.

This will include a general discussion of the last report of the Committee on Practical Pharmacy and Dispensing (page 103, 1900 Proceedings), in which members of the Association, especially those actually engaged in the retail drug business, are earnestly invited to take part. The more important features of the report will be found connected with this circular, that they may be more conveniently studied.

As part of the work of the Section, a number of new and old formulas will be presented for consideration. As early as possible, these will be printed and copies mailed to members, that such may become the subjects of papers, or remarks to be read or made before the Section. A list of desired formulas is hereto attached.

Another feature will be the presentation of new and practical ideas upon the preparation and marketing of family medicines and specifics, to which attention will, also, be called later.

All this, with the reading and discussion of the prize paper will, it is thought, make the session of the new Section a particularly interesting and profitable one. The Committee sincerely begs *your* aid and active co-operation. If you are not in a position to help yourself, you may be able to influence the interest of some one else. Let us all try!

Cordially,

HENRY P. HYNSON, *Chairman*,
423 N. Charles St., Baltimore.

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PRIZE.

Through the generosity of Dr. Enno Sander, Ex-President of the American Pharmaceutical Association, the Practical Pharmacy and Dispensing Section is enabled to offer a *Cash Prize of Fifty Dollars* for the most worthy paper or report presented to it, upon the following conditions:

First. All competitors must be members of the American Pharmaceutical Association, and actively engaged in the retail drug business—principals and assistants equally acceptable—and shall not be connected with the teaching department of any school or college of Pharmacy.

Second. The subject discussed or reported upon, shall be within the scope of pharmaceutical manipulations, dispensing or the actual doings of a retail drug store.

Third. All competing papers or reports must be in the hands of the Secretary of the Section, on or before July 1st, 1901, and must be marked "For competition."

NOTE.—Papers, whose authors do not care to enter them in competition for the prize, may be sent to the Secretary at any time up to the day before the meeting and such are *most earnestly solicited*.

F. W. E. STEDEM, *Secretary*,
Cor. Broad Street, and Fairmount Ave.,
PHILADELPHIA, PA.



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SUBJECTS.

Suggested for experiment, investigation and report to the Section.

1. *Prepared and Sterilized Lard and Suet.* Simple and expeditious methods of preparation that shall uniformly secure satisfactory products are desired.
2. *Benzoinated Lard and Ointments.* Simple method of preparation, if possible, by the use of:
3. *Solution of Benzoin,* prepared after the method suggested by Mr. Richard Shoemaker some years ago.

FORMULAS ARE WANTED FOR :

4. *Emulsion of Petroleum,* and possible combinations.
5. *Emulsion of Bromoform.*
6. *Milk of Magnesia.*
7. *Essence of Pepsin.*
8. *Wine of Gaduol* (so-called Wine of Cod Liver Oil), and suitable combinations.
9. *Gelatin Suppositories,* and various combinations.
10. *Boroglyceride Suppositories,* and various combinations.
11. *Liquid Petroleum Compounds,* suitable for Nasal and Laryngeal Affections (Camphorated, Mentholated, Benzoinated, &c.).
12. *Effervescent Tablets, Lithia Citrate* and others.
13. *Solution of Albuminate of Iron.*
14. *Syrup of Albuminate of Iron* and various combinations.
15. *Solution of Peptonate of Iron.*
16. *Solution of Peptonate of Iron and Manganese.*
17. *Elixir of Terpin Hydrate.*
18. *Elixsr of Terpin Hydrate and Codeine.*
19. *Elixir of Terpin Hydrate and Heroin.*
20. *Hypodermic Tablets* General method of preparation and suitable diluents for the active components, used hypodermatically.

Report of Committee on Practical Pharmacy and Dispensing

* * * * *

A careful examination of the prescriptions for mixtures, reveals at least twenty-four actual incompatibilities. As the sixty-nine cards represent sixteen hundred prescriptions, this would indicate that not less than three of every two hundred prescriptions present incompatibilities. This, however, is the lowest possible estimate that can be made from these figures and will not correspond with deductions allowable from another part of this report. Fourteen of these incompatibilities may be classed as chemical and ten as pharmaceutical. In the latter appear all those due to the use of improper solvents or to the change of solvents, through admixture. It will be well to note, also, that of the chemical changes, eight are caused by reactions between strictly inorganic substances and six by the action of an organic upon an inorganic compound. In no instance does the combination relate to organic chemistry alone.

Twice are effervescent mixtures found which require careful handling. One was the familiar bismuth subnitrate and sodium bicarbonate combination, the other was of rhubarb and sodium bicarbonate. Since these are of comparatively frequent occurrence, note should be made of them by the inexperienced.

In one instance was the good office of glycerin apparent in assisting in the dilution of an alcoholic fluid extract, and once again was another of these troublesome fluid extracts noticed. Indeed, no other class of preparations are so fruitful in annoyance to the dispenser and as often reflect upon the pharmaceutical knowledge of the prescriber as fluid extracts. Their decadence is justly deserved and an acceptable substitute would be intensely popular.

Our investigation emphasizes the fact that the chemical and pharmaceutical characteristics of iron and its compounds should be well understood by physicians and pharmacists. This element and its salts seem to provoke more prescription difficulties than any other. Six times did the official phosphate or pyrophosphate give our correspondents occasion to use their more scientific pharmaceutical attainments and in four instances did the difficulty occur because of the presence of phosphoric acid. It is quite evident that full knowledge should be had by the dispenser of the different forms of phosphoric acid and of the peculiar relation of these to the official iron phosphate and pyrophosphate respectively.

Salol, because of its insolubility in water and because it is difficult to powder in the ordinary way, appears in ten per cent. of the mixtures as a difficult substance to handle. Once it was fused with almond oil and emulsified, in another instance it was, strangely enough, dissolved in oil of wintergreen and emulsified. The unauthorized use of a considerable amount of the essential oil was the more peculiar because as much oil of turpentine was prescribed as there was oil of wintergreen used. The committee offers the information that salol can be more readily powdered after it has been fused and cooled. In this more finely divided state it can easily be suspended in mixture by the proper use of acacia or tragacanth.

By some of our correspondents the solution of pepsin is offered as a process requiring skill. This is true, yet the quality of the pepsin is often an important factor. Greater familiarity of physicians and pharmacists with the more concentrated liquid forms of this ferment with better assurances of their equal reliability would conduce much to the successful handling of this product. Its combination with alkalies, to which our attention has been called, is of such frequent occurrence and the oft-repeated statements from physicians that most satisfactory results are secured from such, so-called, unscientific mixtures, leads your committee to advise our dispensing members to send out these combinations unquestioned; at the same time we suggest to our more scientific brothers the necessity of furnishing to physicians more convincing proof of their inactivity.

In four instances does the tincture of ferric chloride produce untoward effect; three times because of its acid reaction and once because of its immiscibility with mucilage of acacia.

Fowler's Solution evidently causes some annoyance to dispensers because it is frequently prescribed with acid more or less diluted.

These decidedly acid or alkaline reactions in galenicals so many times cause prescription difficulties that we must give them consideration. The ideal liquid preparation is one miscible in all proportions with water without being either acid or alkaline; and the nearer we approach the ideal, the nearer, of course, we approach perfect dispensing. It should, therefore, be a matter of serious concern to us to keep out of our standard formularies all new preparations save those that are neutral, and we should endeavor to reduce the number of such combinations already present; while those remaining should be so renamed as to leave no doubt as to their properties to the prescriber and dispenser, as, for example: acid syrup of squills; acid solution of iron, alcoholic; alkaline solution of arsenic, etc.

Your Committee is fully convinced, however, that Fowler's Solution is not nearly so difficult as it appears, since arsenic is soluble in sufficient amounts, under neutral, acid or alkaline conditions. Its alkalinity is not often in the way, save when the solution is prescribed in comparatively large quantities with such liquids as the tincture of ferric chloride, Majendie's solution, etc. Rarely is it in such proportions as to precipitate ferric hydrate, and when added to an equal quantity of the stronger morphine solution, as has been observed, it must, naturally, be neutralized by an acceptable acid.

In four of the mixtures substances to assist in suspending insoluble powders had to be added, and with results satisfactory to the dispenser; but the question as to how far, or when the compounder can take liberties in this direction, is a debatable one. Some plain rule regulating this should be made possible by that authority in whose province the power would seem to lie.

Three times only were proprietary preparations prescribed in these fifty-two mixtures. One was used twice, suggesting the propriety of including in the National Formulary at least recipes for an alkaline antiseptic solution and a mixture of recently precipitated magnesium hydroxide.

The omission of glycerin when prescribed with potassium chlorate and tincture of ferric chloride makes us ask: Was it to prevent an explosion? Time and time again have members of the Committee seen this combination dispensed without a mishap.

Four per cent. of the mixtures under consideration were so-called "emulsions." One illustrated forcibly an instance where skill and good judgment led the pharmacist to use

the process of saponification to make a presentable mixture, when it is possible the prescriber had no such end in view. This raises a question in the minds of some members of the Committee as to the effect of the resulting combination as compared with the remedies originally prescribed. Therapeutists and pharmacologists should settle this matter in a definite and scientific way. How does the physiological effect of an oleate compare with that of the substance decomposed to form it, and what is the changed medicinal effect, if any, of organic principles subjected to the action of strong alkalies? are questions worthy of practical settlement. When, and to what extent, is a compounder justified in using legitimate emulsifying agents? is also a question worthy of discussion, with the object of establishing a guiding rule well in view. The growing popularity of hydro-carbon oils for internal use, offers investigators the opportunity of suggesting the best means of forming emulsions of these, should they require modifications of the well established forms in use for fixed oils.

A reference to the old-time trouble with Basham's mixture by one of our friends suggests to your Committee the possibility of an obsolete formula for this solution having been used by him, although he seems to have satisfied himself that the trouble was due to "impure" chemicals. Such results described are, in the opinion of this Committee, more often ascribable to insufficient strength than to impurities. We take occasion just here to emphasize as forcibly as we can the great necessity of standardizing products before they are used in operations where definite chemical compounds are to result. Strangely enough, this very important matter is overlooked by many very good pharmacists. The present formula for Basham's mixture, including, as it does, glycerin, cannot be too highly commended. When fairly accurate ingredients are used the solution can be kept indefinitely, and we see no reason why it should not be made up in sufficient quantities to be kept on hand as any other permanent preparation.

A notable instance is presented, by one of the prescriptions received, of very odd quantities; prescriptions of the same character are met with so frequently that we feel justified in calling the attention of dispensers to the absolute necessity of acquiring a facile use of figures. The frequent and serious blunders resulting from inadequate mathematical knowledge is really appalling.

The failure to take advantage of the most valuable quality of honey to suspend a resin, dissolved in alcohol—tincture of guaiac—characterized one of the replies received, and leads us to make a point of this. Honey, straight honey, as is well known, is the very best substance to be found for making mixtures of tinctures of guaiac, benzoin, cannabis, etc., with aqueous fluids. When honey is present in quantities no less than the amount of the resinous tincture ordered, acceptable mixtures will result if the two are thoroughly triturated together before the other liquids are slowly added.

Endless, almost, would be the comments, we think, that could be made upon these two-score and ten prescriptions with profit, we believe, to some of our members, but we must pass on to another class, powders—powders, divided and in papers. Very few of this class were received, yet sufficient to suggest practical points of importance. Reiterating our words of apology, if necessary, we call attention to a simple trituration of calomel with milk sugar, one and a half grains to twenty. The compounder is directed to "rub until a yellow color is obtained," and he remarks that the proportion of the mercurial is so small that no perceptible color can be procured. We are forced to ask: "Did he first triturate with a small quantity an equal bulk of the milk sugar, and if the yellow color then secured was not satisfactory to him?" Again: "Does he use this method al-

ways when triturating?" It is startling how many times we find pharmacists utterly disregard these fundamental principles of trituration, while others are as unmindful of the advantages one substance holds over another for this process. How many of us have seen a grain of strychnine added directly to a whole dram of quinine sulphate, when perhaps thirty grains of dried iron sulphate was to be a part of the same prescription? This is elementary, you say; we admit that it is, but we venture to assert that no fault in dispensing is more common than the one to which we have just referred.

Pepsin in powders, without drying material, but, on the contrary, with almost double its weight of ammonium chloride, leaves us with well defined ideas of the troubles following the dispensing of hygroscopic and volatile substances in papers. Of course waxed or some other impervious paper should be at hand always, cut in proper sizes. A recent experience of one of our members leads us to think that well-ground glass stoppered, salt-mouth bottles, of suitable sizes, are the proper containers for such powders.

The other prescription for powders calls for "guaiaic" and created a doubt in the mind of the party receiving it as to whether the wood or resin was intended. As it also contains ammonium chloride and potassium nitrate, it brings up the question whether or not granular substances and very small crystals should be reduced to a fine powder when dispensed in papers. Seemingly a simple matter, yet when coupled with a want of knowledge as to the manner of administration, it adds another perplexity to the dispenser's living. If to be dissolved, the granular or crystalline form seems preferable. If to be taken dry on the tongue, or if insoluble, then the very finest form obtainable is to be preferred.

The five prescriptions for pills, kindly furnished us, clearly illustrate three types of difficult masses—phosphorus, one type, oils and oil-like substances one, and a non-reducible article, the third. It is a question if in even a small percentage of instances, the conscientious pharmacist is quite satisfied with his efforts in making pills containing phosphorus, notwithstanding he may be well informed as to methods, and may have had extended experience. Expert and accurate weighing, quick and careful manipulation, the least possible exposure; yet, after all, what does an estimate of the amount of free phosphorus remaining bring? It is just here, if never again, that we count ready-made pills a blessing, because the responsibility is shifted, wax and all. Tolu coating, often, as in this instance, suggested: What is our success in this operation? We read and read about tolu coating, and when we try it, we wonder if the writing is not all theory. Let us lend much encouragement to the would-be essayist on phosphorus in pills and on tolu coating, if his writings are to be based upon actual practice.

A member kindly sends a prescription of strychnine sulphate, arsenous acid, phosphorus and pepsin. He writes: "This required quick handling; dissolved phosphorus in chloroform, and after triturating other ingredients thoroughly, added the mixture to the solution of phosphorus, massed, made pills and coated with ethereal solution of tolu." The only thing omitted is a sample of the pills. The Association needs just such pertinent words and such an exhibit as these pills would make.

Essential oils and similar bodies are still used in pills, especially in emmenagogue compounds, and success in manipulating largely depends upon the quantity of oil prescribed or used. There is little doubt that soap is our most helpful aid in massing these, yet we are not warranted in using comparatively large quantities of soap. Experienced operators tell us that soap exerts its best influence when mixed directly with the oil; the other articles are to be added to the paste thus formed.

Another writer and thoroughly practical member, commenting upon a prescription for pills containing iron sulphate, strychnine sulphate, arsenous acid, powdered digitalis and creosote, one grain of the latter to each pill, writes as follows;

"Triturate strychnine sulphate and arsenic with five grains of milk sugar, add iron sulphate and digitalis; remove from mortar. Weigh creosote in homeopathic vial, pour in empty mortar and add powdered extract of licorice and kaolin, each twenty grains, rub together, add the mixed powders and glucose to make mass, which must be carefully "coaxed" into a pipe with the fingers and palm of hand. Cut with machine, but do not roll with it; form pills with fingers. Result, a satisfactory pill containing *all* the creosote."

The third mass represents that class where substances are prescribed that cannot without much labor or without skill be reduced to a uniform state. In this instance salol and resin guiac are the only ingredients, and it offers an opportunity for the judicious application of heat, an element in manipulations as often overlooked as it is carelessly and ignorantly applied.

How much and yet how little have we written on pills, this varied and fruitful subject for practical work, and while it always stands inviting the attack of the sincere investigator, is scarcely more worthy of his skill than is the making of suppositories.

Of the four lots of suppositories presented, three demand skillful treatment because they contain chloral hydrate. Not one whit less troublesome has scientific or higher pharmacy made this prescription than it was to our elder brothers thirty years ago. Your Committee is led to ask why some special base has not been offered for suppositories of chloral. That nothing of the kind is well known is proven by the fact that cocoa butter is prescribed in each instance, and because each pharmacist employed a different method. One used "seventy-five grains of corn starch and a few grains of cocoa-butter to make mass" for six suppositories containing five grains of chloral each. Another rubbed the chloral hydrate (sixty grains) with twenty grains powdered tragacanth, proceeded in the usual way, using a slightly warmed spatula and shaping the suppositories by hand. The third operator, whose prescription contains sodium bromide one dram and chloral hydrate thirty grains in four suppositories, overcame the difficulty "by using a freezing mixture of ice and salt."

Two of these are from Washington, where, it seems, the President is not the only one who "has troubles." The other was from Boston.

The remaining contribution upon the subject of suppositories is a preparation of urethral bougies containing two per cent. protargol. With it is sent the following note:

"The base is a gelatin one, composed of gelatin, glycerin and water. The protargol is dissolved in one dram water, gelatin base melted on water bath and solution incorporated, then poured in bougie molds three inches long, which have been previously well dusted with lycopodium. About one to two hours are necessary to put up the prescription "

This latter prescription suggests to us the desirability of specific knowledge regarding the several new silver salts that are daily growing in popularity. No doubt valuable information could be furnished this association by its members upon this subject. The committee takes the liberty of calling attention to the fact that these compounds are hardly less sensitive to light than is the nitrate. This is known to have been frequently overlooked by dispensers.

The prescription also brings to mind different urethral suppository moulds and the

great difficulty of filling them, and leads us to give the method of a member of the committee: Moulds are used only for gelatin bases, and the dividable kind are preferred. These are slightly warmed and the cooling mass is poured over an upturned half, lying flat, in sufficient quantities to more than fill the moulds, the other half is then quickly put in place, and the two tightly squeezed together by strong screw clamps. With some little experience an operator can follow this plan so successfully as to have but the thinnest film between the mould, which can be easily and neatly pared off with sharp shears..

The chloral series of suppositories calls attention again to the questionable propriety of adding foreign substances to prescriptions, suggesting the possibility of retarded effects. A member of the committee was some time since criticised by an intelligent and observant physician, because five per cent. of wax had been used in suppositories of morphine when the thermometer was several degrees above ninety. The doctor declared they would not liquefy in the colon if they could not be made to stand the atmospheric temperature without wax. The tendency of starch or tragacanth in this connection should be known.

Although a much younger class, capsules are none the less interesting. Their popularity is evidenced by the larger percentage of prescriptions received for them. More than twelve per cent. of the whole number submitted were for this modern introduction. Although they are described as "messy" by one of our correspondents, we must receive them as a three-fold blessing, helping physician, pharmacist and patient. They allow the prescribing of remedies otherwise out-of-the-question, make possible the dispensing of heretofore unthought-of combinations, and finally, render the most objectionable dose entirely acceptable. God bless the man who invented the "empty capsule!" To him medicine and humanity owe homage of a kind almost equal to that paid the discoverer of anaesthesia, and yet, who knows his name or where he lived or died? His history would indeed be interesting.

The prescriptions for capsules in hand suggest several general and important questions which might be answered by our members with profit to all. Rules might be formulated touching the filling of capsules which would greatly relieve the uncertain position of the dispenser as he now stands.

Certainly the quality and solubility of the material used in the capsules should be above question. The source of gelatin and the manner of its handling should be within the knowledge of the manufacturer of these much-used receptacles for medicines. The style and finish is secondary, yet withal quite important. Of great moment to the dispenser are variations in weight. For rapid and accurate filling the nearest possible approach to uniformity in this particular should be secured. With this condition met, and the use of a capsule as a counterpoise, the most rapid and accurate filling can be secured.

Fellow members, express to your brothers your opinion upon the question of filling capsules—whether or not in every instance when they can be filled dry, it should be so done. If sometimes mass and sometimes dry, say when and why, and try to establish guiding principles. Did it ever occur to you that the time required to mass your powders, to divide and shape your divisions, to carefully wash your hands and introduce the ovoid, was far in excess of the time required to fill dry, weigh and carefully wipe off? Earnest advocates of the rival plans might have capsule filling "bees" with much profit to the pharmaceutic world at large. Upon two points, at least, we must all agree; we must not balk the purposes of the capsule by allowing the least particle of the intended contents to remain on the outside, and when massed, each division should present the

same appearance, and should be of sufficient size to fill the capsule. Dusting powder should be used just as little as possible. Oh, what sights have we seen!—notwithstanding the fact that the non-graduate dispenser is now a *rara avis* with our generous eye toward him, while his full-fledged and strong-winged brother stayeth not always at home.

Seemingly of little interest are the three cards referring to ointments, yet, like almost every other prescription, each calls up some unsettled, some doubtful question. Each plainly proves how practiced, how quick, must be the judgment and action of the dispensing pharmacist; each proving, again, that success in this department of pharmacy is almost wholly dependent upon a knowledge of fixed principles and an acquaintance with general laws, rather than upon specific learning touching the point in question, since one can never be prepared for the endless variety of complications successively presenting themselves.

Not peculiar to ointments, of course, is the prescription which leaves us, after all that either acquirement or experience can possibly give, still in doubt. Such an one is "Ung. Hydrarg. Ammon. Nit." Besides seeing the prescriber, there is but one possible solution of this difficulty, and that is a negative one. Yet it plainly tells us, that it is not the ointment of white precipitate that is wanted, because the doctor plainly writes "Ointment of Ammoniated Mercury (Nit.)." This negative answer, however, is hardly satisfactory.

But does not this order suggest to us, who have trudged wearily far along the way, that knack, experience, patience and skill are required to prepare two very common ointments? The next one for balsam peru, liquid storax and ointment of zinc oxide, is scarcely less interesting. At once it creates a desire on our part to help our younger brothers. How long were we learning that nearly all the difficulties resulting from the use of balsam peru in ointments and suppositories, in the latter especially, were due to the rapid vaporization of its more volatile parts? And when did we learn, as our kind friend who sent us the prescription, that the liquid storax must be softened and rendered uniform by adding sufficient alcohol before mixing it with the base? Do not think you can melt and strain it. And ointment of zinc oxide, do the pharmacists generally know how to make it satisfactorily? Is yours and ours always what it should be? Twenty-five samples, promiscuously purchased, and critically examined, would make a very interesting, but I fear not a very creditable, showing for the higher pharmacy of to-day.

The last of the series is full of meat. It brings up the liquefaction of menthol and camphor when triturated together. It makes us ask: "Should oil of wintergreen be dispensed when methyl salicylate is ordered?" And lastly, it calls our attention to lanolin, its growing popularity, a Pharmacopœia substitute, and suggests another question: Should we, as directed on the can, "always add twenty per cent. of olive oil to lanolin before dispensing it?" If so, why does not the manufacturer add the oil and present the base in its proper form? Then, too, we are reminded that we can make a very desirable ointment base containing as much as sixty per cent. of water by using ten per cent. of oil of almonds and thirty per cent. of lanolin. If these three simple prescriptions for ointments offer so much of real practical interest, are we not too often overlooking the washings at our feet while trying to catch the first sight of the new ship that is to bring us glory and honor?

It would be wise, perhaps, to close this report without making reference to the three remaining prescriptions; each a representative of classes entirely distinct; types of

classes that are daily enlarging, that are growing more and more popular. The formula for a dusting powder given us seems an impossibility. It was sent without comment and is as follows: Salicylic acid, one and one-half drachms; zinc oxide, two ounces; oil of cade, two and one-half drachms, "dust three times daily." More satisfactory ones of this kind are daily coming in, and no pharmacy can now get along without a set of small bolting-cloth sieves and assorted deep boxes with perforated inner tops to meet the requirements of such demands.

Konseals, while not near so popular as capsules, are being used considerably, and represent one per cent. of the prescriptions sent us. It would be both interesting and profitable to know if this form of dispensing is really growing in popular favor. If it is, more attention should be paid to its improvement. Both cachets and machine might be bettered; the first are too bulky and forbidding, and the machine unnecessarily expensive.

The last prescription to be noted reminds us how greatly a pharmacist may add to his reputation by acquiring the best methods for filling soft capsules, since they too are becoming more and more popular. Our contributor in this line offers an ingenious plan for dispensing a semi-fluid mass in this form. Oleo-resin male fern, one drachm; croton oil, one drop, and powdered kamala, forty grains, are to be mixed and put into soft capsules. The required quantity was "injected" into the capsules with a long pointed glass syringe. They were sealed in the usual way, the manner of introduction alone being novel.

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PRACTICAL PHARMACY AND DISPENSING,

AMERICAN PHARMACEUTICAL ASSOCIATION.

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